What is claimed is:

1. A method for determining a location of an object substantially touching a touch pad, the touch pad having a plurality of surrounding edges, said method comprising:

providing a light sheet over the touch pad such that the light sheet is partially blocked by the object when the object substantially touches the touch pad, wherein the light intensity of the light sheet is spatially varying in such a manner that the blocked intensity is dependent upon the location of the touching object;

disposing a light detecting structure adjacent to at least one of the surrounding edges of the touch pad for measuring the light intensity of the light sheet, wherein the measured light intensity is reduced by the blocked intensity when the light sheet is partially blocked by the touching object; and

calculating the location of the touching object based on the measured reduced intensity.

2. The method of claim 1, wherein the light detecting structure is disposed adjacent to a first surrounding edge, and the light sheet is provided by a light providing structure disposed adjacent to a second surrounding edge opposite to the first surrounding edge, and wherein the light providing structure has a longitudinal axis and a plurality of light providing sections disposed along the longitudinal axis to provide a plurality of light portions of the light sheet such that the intensity of the light portions varies along the longitudinal axis.

3. The method of claim 2, wherein the light providing structure comprises:

a light source for providing a light beam along the longitudinal axis; and

a plurality of partially reflecting surfaces disposed in said light providing sections to partially reflect the light beam toward the light detecting structure for providing said plurality of light portions of the light sheet.

4. The method of claim 3, wherein the light providing structure comprises a plurality of substantially parallel plates having a plurality of interfaces between adjacent parallel plates to provide said partially reflecting surfaces.

5. The method of claim 3, wherein the light source comprises a laser.

6. The method of claim 3, wherein the light beam is a substantially collimated light beam.

7. The method of claim 2, wherein said surrounding edges further comprise a third surrounding edge and an opposing fourth surrounding edge, said method further comprising:

providing a further light providing structure adjacent to the third surrounding edge for providing a further light sheet over the touch pad such that the further light sheet is partially blocked by the object when the object substantially touches the touch pad, wherein the light intensity of the further light sheet is spatially varying in such a manner that the blocked intensity is dependent upon the location of the touching object;

disposing a further light detecting structure adjacent to the fourth surrounding edge to measure the light intensity of the further light sheet, wherein the measured light intensity of the further light sheet is reduced by the blocked intensity when the further light sheet is partially blocked by the touching object; and

calculating the location of the touching object also based on the measured reduced light intensity of the further light sheet.

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~~11~~. A light detecting system for use in conjunction with a touch pad for determining a location of an object substantially touching the touch pad, the touch pad having a plurality of surrounding edges, said system comprising:

a light sheet disposed over the touch pad such that the light sheet is partially blocked by the object when the object substantially touches the touch pad, wherein the light intensity of the light sheet is spatially varying in such a manner that the blocked intensity is dependent upon the location of the touching object;

a light detecting structure disposed adjacent to at least one of the surrounding edges of the touch pad for measuring the light intensity of the light sheet for providing a signal indicative of the measured light intensity, wherein the measured light intensity is

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reduced by the blocked intensity when the light sheet is partially blocked by the touching object; and

a computation module, responsive to he signal, for calculating the location of the touching object based on the measured reduced intensity.

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~~12.~~ The system of claim 11, wherein the light detecting structure is disposed adjacent to a first surrounding edge, and the light sheet is provided by a light providing structure disposed adjacent to a second surrounding edge opposite to the first surrounding edge, and wherein the light providing structure has a longitudinal axis and a plurality of light providing sections along the longitudinal axis to provide a plurality of light portions of the light sheet such that the intensity of the light portions varies along the longitudinal axis.

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~~13.~~ The system of claim 12, wherein the light providing structure comprises

a light source for providing a light beam along the longitudinal axis; and

a plurality of partially reflecting surfaces disposed in said light providing sections to partially reflect the light beam toward the light detecting structure for providing said plurality of light portions of the light sheet.

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~~14.~~ The system of claim 13, wherein the light providing structure comprises a plurality of substantially parallel plates having a plurality of interfaces between adjacent parallel plates to provide said partially reflecting surfaces.

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~~15.~~ The system of claim 13, wherein the light source comprises a laser.

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~~16.~~ The system of claim 13, wherein the light beam is substantially collimated.

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~~17.~~ The system of claim 13, wherein the light source emits light in the visible wavelength region.

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~~18.~~ The system of claim 13, wherein the light source emits light in the infrared wavelength region.

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~~19.~~ The system of claim 12, wherein said surrounding edges further comprise a third surrounding edge and an opposing fourth surrounding edge, said system further comprising:

a further light providing structure disposed adjacent to the third surrounding edge for providing a further light sheet over the touch pad such that the further light sheet is partially blocked by the object when the object substantially touches the touch pad, wherein the light intensity of the further light sheet is spatially varying in such a manner that the blocked intensity is dependent upon the location of the touching object; and

a further light detecting structure disposed adjacent to the fourth surrounding edge to measure the light intensity of the further light sheet for providing to the computation module a further signal indicative of the measured light intensity of the further light sheet, wherein the measured light intensity of the further light sheet is reduced when the light sheet is partially blocked by the touching object, so as to allow the computation module to calculate the location of the touching object also based on the measured reduced light intensity of the further light sheet in response to the further signal.

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~~20.~~ The system of claim 11, wherein the light detecting structure comprises:

a light detector for providing the signal; and

a light pipe for receiving at least a part of the light sheet and conveying at least a part of the received light to the light detector.

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~~21.~~ The system of claim 20, wherein the light pipe has a first end, an opposing second end, a longitudinal axis connecting the first end and the second end, and a pipe surface along the longitudinal axis, wherein the light detector is disposed at the first end, and wherein the pipe surface has diffractive or prismatic surfaces to convey said at least a part of the received light to the first end.

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~~22.~~ The system of claim 21, wherein the light detecting structure further comprises:

a reflecting surface disposed at the second end of the light pipe for directing at least a further part of the received light toward the light detector.

~~23.~~ 20 The system of claim 22, wherein the reflecting surface is provided by a mirror disposed adjacent to the second end of the light pipe.

~~24.~~ 21 The system of claim 21, wherein the light detecting structure comprises:

a further light detector disposed at the second end of the light pipe, wherein the diffractive or prismatic surfaces also convey a further part of the received light to the further light detector for providing a further signal so as to allow the computation module to calculate the location of the touching object also based on the further signal.

~~25.~~ 22 The system of claim 14, wherein an air gap is provided between two adjacent parallel plates.

~~26.~~ 23 The system of claim 14, wherein a substantially transparent bonding material is provided between two adjacent parallel plates.

~~27.~~ 24 The system of claim 14, wherein the plurality of substantially parallel plates comprise plates made of materials of different refractive indices.

~~28.~~ 25 The system of claim 14, wherein at least a partial reflective coating is provided at each of the interfaces.